

Adequacy of Treatment for Serious Mental Illness in the United States

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Serious mental illness, defined in federal legislation as a mental disorder that substantially interferes with one's life activities and ability to function, has been estimated to afflict 5.4% of the US adult population each year.^{1,2} Concerns about the levels of treatment received by those with serious mental illness have been growing as a result of recent changes in social welfare policy and mental health care delivery systems.³ In response, the federal government passed Public Law 102-321, the Alcohol, Drug Abuse, and Mental Health Administration Reorganization Act, establishing block grants for states to fund community mental health services exclusively for patients with serious mental illness who are unable to pay for care. Funds allocated under these block grants amount to less than \$50 per year for each individual with serious mental illness living in poverty.^{1,2} For these reasons, concerns persist that patients with serious mental illness fail to receive adequate care. Such concerns have sparked a debate over the priority that should be given to the treatment of people with serious mental illness in redesigned public insurance schemes.⁴⁻⁷

Few empiric data exist on patterns of treatment among people with serious mental illness. Through the use of data from the National Comorbidity Survey (NCS) and the Epidemiologic Catchment Area Study, it has been estimated that roughly half of those with serious mental illness receive some form of treatment in a given year.^{1,2,8} Although this estimate is disturbingly low, the effective treatment rate could be even lower. A growing body of literature suggests that mental health treatments, if they are to be effective, must conform with evidence-based guidelines regarding type of treatment, intensity of treatment, and duration of treatment.⁹⁻¹³ Previous studies have shown that a substantial proportion of people in treatment for mental disorders do not receive minimally acceptable care.¹⁴⁻¹⁷ It is not implausi-

Objectives. The purpose of this study was to assess the prevalence and correlates of treatment for serious mental illness.

Methods. Data were derived from the National Comorbidity Survey, a cross-sectional, nationally representative household survey assessing the presence and correlates of mental disorders and treatments. Crude and adjusted likelihoods of receiving treatment for serious mental illness in the previous 12 months were calculated.

Results. Forty percent of respondents with serious mental illness had received treatment in the previous year. Of those receiving treatment, 38.9% received care that could be considered at least minimally adequate, resulting in 15.3% of all respondents with serious mental illness receiving minimally adequate treatment. Predictors of not receiving minimally adequate treatment included being a young adult or an African American, residing in the South, being diagnosed as having a psychotic disorder, and being treated in the general medical sector.

Conclusions. Inadequate treatment of serious mental illness is an enormous public health problem. Public policies and cost-effective interventions are needed to improve both access to treatment and quality of treatment. (*Am J Public Health.* 2002;92:92-98)

ble that the same is true for the subset of patients with serious mental illness.

The present study was undertaken to address 2 aims. First, we sought to use a large, nationally representative general population survey to estimate the proportion of people with serious mental illness who receive care consistent with available evidence-based treatment recommendations.¹⁸⁻²³ Second, we sought to identify correlates of receiving any treatment and receiving minimally adequate treatment. Identifying such correlates is a critical first step in developing and targeting interventions to improve the appropriateness of care and health outcomes of those with serious mental illness.

METHODS

Study Population

The NCS^{24,25} was a nationally representative household survey conducted between 1990 and 1992 and administered face to face to 8098 respondents aged 15 to 54 years. The survey involved conventional interviewer administration rather than self-administration or computer-assisted administra-

tion. Part 1 (82.4% response rate), initially administered to all respondents, assessed the prevalence rates and correlates of disorders defined in the *Diagnostic and Statistical Manual of Mental Disorders, Revised Third Edition (DSM-III-R)*; a modified version of the World Health Organization Composite International Diagnostic Interview (CIDI)²⁶ was used for this part of the survey.

Part 2 was administered to all respondents who screened positive for any disorder in part 1 (98.1% conditional response rate), all other respondents aged 15 to 24 years (99.4%), and a random subsample of other respondents (99.0%) (a total of 5877 respondents). Part 2 assessed additional disorders, role impairments, and treatments received. The current report is based on the part 2 sample. So that data would be representative of the overall US population, they were weighted to reflect differential probabilities of selection and differential nonresponse rates.

Measures

Serious mental illness. Public Law 102-321 defines serious mental illness as the presence of any *DSM* mental disorder, substance use

disorder, or developmental disorder that leads to “substantial interference” with “one or more major life activities.” The diagnostic component of this definition was operationalized in the NCS with CIDI diagnoses of 3 broad classes of 12-month *DSM-III-R* disorders: mood disorders (major depression, dysthymia, bipolar disorder), anxiety disorders (panic disorder, generalized anxiety disorder, phobias, posttraumatic stress disorder), and nonaffective psychoses (schizophrenia, schizophreniform disorder, schizoaffective disorder, delusional disorder, brief psychotic disorder, and psychotic disorder not otherwise specified).

Clinical reappraisal studies documented acceptable to good concordance between most of these diagnoses and blind clinical reinterviews using the Structured Clinical Interview for DSM-III-R as the validation standard.^{27,28} Exceptions were mania²⁹ and nonaffective psychosis,³⁰ both of which were overdiagnosed by the CIDI according to clinical reinterviews. We addressed overdiagnosis of mania by confining assigned CIDI diagnoses to the euphoric–grandiose subtype of mania, which was assessed with good validity in the NCS. Overdiagnosis of nonaffective psychosis was addressed by carrying out clinical reinterviews with all NCS respondents who screened positive for nonaffective psychosis according to the CIDI and basing final diagnoses on these clinical assessments rather than the original CIDI classifications.

Respondents who met criteria for one of these 12-month CIDI disorders were defined as having serious functional impairment if their disorder was associated with vocational incapacity (as indicated by either inability to hold a job or frequent work absence owing to mental health problems), serious interpersonal difficulties (as indicated by either social isolation or frequent interpersonal difficulties), or a suicide plan or attempt within the previous 12 months or if their disorder met criteria for a “severe mental illness” as operationalized by the National Advisory Mental Health Council of the National Institute of Mental Health.⁸ The operationalization of serious mental illness has been discussed in more detail elsewhere.^{1,2}

Mental health care sectors. Mental health care in the 12 months before the survey was

divided into care received in 5 sectors: (1) general medical sector (seeing a medical doctor other than a psychiatrist in any setting for a mental or emotional problem); (2) psychiatry sector (seeing a psychiatrist for treatment of a mental health problem); (3) nonpsychiatry, mental health specialty sector (seeing a psychologist, social worker, therapist, or counselor for a mental health problem); (4) human services sector (seeing a non–health care professional such as a minister, priest, rabbi, or spiritual advisor for a mental or emotional problem); and (5) self-help sector (participating in a formal self-help or mutual assistance group not run by a professional for a mental or emotional problem). The psychiatry and nonpsychiatry specialty mental health sectors were aggregated to form a category labeled mental health specialty.

Minimally adequate mental health care. We used available evidence-based treatment guidelines for primary care¹⁸ and specialty mental health providers^{19–23} to create working definitions (described elsewhere^{14,17}) of minimally adequate treatment. Minimally adequate treatment during the previous 12 months was defined as follows: (1) receipt of a prescription for an appropriate medication (antidepressant or mood stabilizer for mood disorders; antidepressant or anxiolytic for anxiety disorders; antipsychotic medication for nonaffective psychoses), in combination with 4 or more visits for a mental health problem with a psychiatrist, general medical doctor, or other medical doctor, or (2) among respondents who were not psychotic, 8 or more visits for a mental health problem with either a psychiatrist or another type of mental health specialist.

On the basis of our observation that 4 or more visits for follow-up and medication monitoring are generally recommended during the acute and continuation phases of treatment for mood, anxiety, and psychotic disorders in evidence-based treatment guidelines, a minimum of 4 visits was required for patients receiving medication.^{18–23} For mood and anxiety disorders, the decision to require 8 or more visits to a mental health specialist in the absence of appropriate medication was based on the observation that time-limited psychotherapies with documented efficacy in treating mood or anxiety disorders have gen-

erally required at least 8 sessions in clinical trials.^{18–20,22,23}

Statistical Analysis

The percentages of subjects with individual disorders and serious mental illness who received any mental health care as well as minimally adequate treatment were calculated for the entire study population and for those receiving care in particular health sectors. Bivariate and multivariate logistic regression analyses were used to study associations between sociodemographic covariates and 3 outcomes: (1) receipt of mental health care in any sector among those with serious mental illness, (2) receipt of minimally adequate care among those receiving any mental health care for serious mental illness, and (3) lack of receipt of minimally adequate care among those with serious mental illness.

The method of jackknife repeated replications was used in computing standard errors of prevalence estimates and of logistic regression coefficients to adjust for the design effects introduced by clustering and weighting of observations for differential probabilities of selection and nonresponse.³¹ The significance of differences between pairs of coefficients was evaluated with *z* tests based on these corrected standard errors.

RESULTS

Rates of Any Treatment and Minimally Adequate Treatment

The percentages of subjects with serious mental illness who received any mental health treatment in the 12 months before the survey ranged from 39.4% among those with anxiety disorders to 55.9% among those with nonaffective psychoses (see the first set of columns in Table 1). Among subjects with serious mental illness receiving any treatment, the percentages who received minimally adequate treatment ranged from 7.3% for those with nonaffective psychoses to 48.5% for those with anxiety disorders (see the second set of columns in Table 1).

The third set of columns in Table 1 includes the overall percentages of subjects with serious mental illness who did not receive minimally adequate mental health treatment; these percentages ranged from

TABLE 1—12-Month Prevalences of Any Treatment for Serious Mental Illness (SMI) and Minimally Adequate Treatment, by Type of Disorder: United States, 1990–1992

	Receiving Any Treatment, Among Those With SMI and Specific Disorders		Receiving Minimally Adequate Treatment, Among Those With SMI and Specific Disorders		Not Receiving Minimally Adequate Treatment, Among Those With SMI and Specific Disorders	
	No. (%)	SE	No. (%)	SE	No. (%)	SE
Anxiety disorder	289 (39.4)	3.7	113 (48.5)	4.7	289 (81.1)	2.0
Mood disorder	250 (45.8)	3.8	113 (48.2)	4.1	250 (78.2)	2.6
Nonaffective psychosis	18 (55.9)	12.4	10 (7.3)	4.6	18 (95.9)	1.9
Any of the above disorders	361 (40.0)	3.4	142 (38.9)	3.8	361 (84.7)	1.9

Note. “Any treatment” was defined as having made at least 1 visit for a mental health problem to a general medical physician, other physician, psychiatrist, psychologist, social worker, or counselor in the past 12 months. “Minimally adequate treatment” was defined as having received the following in the previous 12 months: for mood disorder and anxiety disorder, (1) an appropriate medication (antidepressant or mood stabilizer for mood disorder and antidepressant or anxiolytic for anxiety disorder) plus at least 4 visits to a psychiatrist, general medical physician, or other physician, or (2) in the absence of an appropriate medication, at least 8 visits to a psychiatrist, psychologist, social worker, or counselor; for nonaffective psychosis, an appropriate medication (antipsychotic medication) plus at least 4 visits to a psychiatrist, general medical physician, or other physician; and for “any of the above disorders,” minimally adequate treatment as defined above for any mood disorder, anxiety disorder, or nonaffective psychosis in the previous 12 months.

TABLE 2—Health Care Sectors Used by Patients With Serious Mental Illness (SMI): United States, 1990–1992

	Receiving Treatment in Specific Health Care Sectors, Among Those Receiving Any Treatment for SMI and Specific Disorders		
	General Medical Sector (GMS) Only, % (SE)	Mental Health Specialty (MHS) Sector Only, % (SE)	Both GMS and MHS Sector, % (SE)
Anxiety disorder (n = 113)	17.8 (3.2)	57.9 (5.6)	24.2 (4.9)
Mood disorder (n = 113)	18.3 (3.6)	58.1 (5.0)	23.6 (4.6)
Nonaffective psychosis (n = 10)	9.4 (6.8)	66.0 (15.0)	24.6 (14.5)
Any of the above disorders (n = 142)	20.0 (3.0)	56.6 (4.8)	23.4 (4.3)

Note. “Any treatment” was defined as having made at least 1 visit for a mental health problem to a general medical physician, other physician, psychiatrist, psychologist, social worker, or counselor in the past 12 months. “General medical sector” care was defined as having made at least 1 visit for a mental health problem to a general medical physician or other nonpsychiatrist physician in the past 12 months. “Mental health specialty” sector care was defined as having made at least 1 visit for a mental health problem to a psychiatrist, psychologist, social worker, or counselor in the past 12 months.

78.2% among those with mood disorders to 95.9% among those with nonaffective psychoses. On the basis of 1999 US Census Bureau data, these estimates translate to a total of more than 8.5 million individuals with serious mental illness in the US population who do not receive minimally adequate treatment each year.

Treatment in Specific Health Care Sectors

The percentages of patients with serious mental illness and specific disorders receiving mental health treatment in particular health care sectors are shown in Table 2. Relatively few patients with serious mental illness re-

ceived mental health treatment exclusively in the general medical sector. Higher percentages of subjects received treatment in both the general medical and mental health specialty sectors, while the highest percentages received treatment exclusively in the mental health specialty sector.

Table 3 presents the percentages of patients with serious mental illness whose treatment was minimally adequate. The percentages receiving minimally adequate treatment were smallest among those treated exclusively in the general medical sector and higher among those treated in both the general medical and mental health specialty sectors. With the exception of patients with nonaffective

psychoses, the highest percentages receiving minimally adequate treatment were observed among those who were treated exclusively in the mental health specialty sector.

Correlates of Treatment

The first column of Table 4 presents the percentages of subjects who received any mental health treatment among those with serious mental illness in strata defined by socio-demographic characteristics. Factors significantly associated with receiving any treatment for serious mental illness, also presented in Table 4, included older age (relative to younger age), living in the South (relative to living in the Northeast), and being unemployed or a student (relative to being employed).

The second set of columns in Table 4 includes the percentages of patients with serious mental illness who received minimally adequate treatment. Factors significantly associated with receiving minimally adequate care are shown as well, and these factors included being non-Hispanic White (vs Black), being Hispanic (vs non-Hispanic White), and residing in the Northeast (vs the South).

Finally, the percentages of respondents with serious mental illness who did not receive minimally adequate treatment appear in the third set of columns in Table 4. Factors significantly associated with not receiving adequate treatment included being in the youngest age group (vs the oldest) and being Black (vs non-Hispanic White).

TABLE 3—12-Month Prevalences of Receiving Minimally Adequate Treatment for Serious Mental Illness (SMI) in Specific Health Care Sectors: United States, 1990–1992

	Receiving Minimally Adequate Treatment in Specific Health Care Sectors, Among Those Receiving Any Treatment for SMI and Specific Disorders					
	General Medical Sector (GMS) Only		Mental Health Specialty (MHS) Sector Only		Both GMS and MHS Sector	
	No. (%)	SE	No. (%)	SE	No. (%)	SE
Anxiety disorder	20 (31.0)	10.8	65 (54.0)	6.1	27 (48.2)	8.0
Mood disorder	21 (21.8)	11.8	65 (58.0)	5.3	27 (44.8)	8.2
Nonaffective psychosis	1 (0.0)	0.0	7 (3.2)	3.5	2 (21.0)	32.0
Any of the above disorders	29 (19.6)	8.7	80 (45.7)	4.8	33 (39.1)	7.5

Note. See Tables 1 and 2 for descriptions of treatments and sectors.

DISCUSSION

Our results should be interpreted with the following 4 sets of limitations in mind. First, the prevalence of serious mental illness may have been underestimated owing to both potential nonresponse bias and the fact that disorders assessed in the NCS represent only a subset of those included in *DSM-III-R*. In addition, we may have missed many of the most severely impaired individuals with serious mental illness, because homeless and institutionalized individuals were excluded. A probable effect of this set of limitations is that we underestimated the number of people with serious mental illness who are inadequately treated.

Second, although adherence to certain recommendations in evidence-based treatment guidelines has been demonstrated to lead to improved clinical outcomes,^{9–13} we are not aware of studies that have validated our exact definition of minimally adequate treatment. As a result of the nonrandom use of treatments in our study population, we could not investigate whether receipt of our definition of minimally adequate care was associated with improved health outcomes.

Third, we examined the influence of only some patient and health care system factors on type of mental health care received; we did not have the ability to investigate others such as those related to providers. In addition, because of the study's cross-sectional nature, we cannot conclude that factors associated with inadequate treatment are related causally.

Finally, more than 8 years have elapsed since NCS data collection ended in 1992. Dramatic changes have occurred in the intervening years in mental health treatments (e.g., introduction of new medications with potentially greater tolerability) and delivery systems (e.g., greater proportions of individuals receiving mental health treatment under managed care). Although the impact of these changes on the adequacy of treatment for serious mental illness is unknown, emerging evidence from nationally representative data gathered in the late 1990s indicates that inadequate treatment of serious mental illness persists.¹⁷ The National Comorbidity Survey Replication, currently under way, will also provide data on any temporal changes in the adequacy of treatment that may have occurred in the past decade.³²

In spite of these limitations, the present results shed light on an enormous public health problem. Among patients with serious mental illness, fewer than 1 in every 6 received treatment that could be considered minimally adequate. Considering serious mental illness only on the basis of the 3 types of mental illnesses studied here, this translates into more than 8.5 million individuals with serious mental illness in the United States who do not receive adequate treatment each year.

The percentage of patients receiving minimally adequate treatment was lowest in the extremely vulnerable group with nonaffective psychotic disorders, among whom fewer than 1 in 20 received minimally adequate care. Individuals with chronic psychotic disorders often lack the ability and resources to obtain

mental health treatments.^{33,34} Neuroleptics that are used to treat psychotic disorders have also been shown to be less tolerable than other psychotropic medications.^{35–37} However, it is possible that patient adherence has increased with the introduction of newer atypical antipsychotic medications with improved side-effect profiles.^{38,39}

Patients with serious mental illness were more likely to receive both any mental health care and minimally adequate treatment in the mental health specialty sector than in the general medical sector. Potential explanations for this finding include the increasing use of primary care providers as “gatekeepers,” competing demands experienced by primary care providers for their attention and resources, lack of training in recognition and proper diagnosis of mental disorders, and lack of knowledge concerning optimal treatment regimens among primary care providers.^{16,40–46} However, it is important to emphasize that improvements in the quality of treatment for serious mental illness appear to be needed in all health care sectors.

Our finding of greater treatment adequacy among patients cared for exclusively by mental health specialists differs somewhat from the results of recent clinical trials indicating that some integrated models of mental health care improve treatment adequacy.^{9–12} It is possible that actual, “real-world” mental health care involving multiple treaters rather than a single mental health specialist leads to inefficiencies, poor communication among treaters, or other adverse effects on treatment adequacy.

TABLE 4—Predictors of Receiving Any Treatment and Receiving or Not Receiving Minimally Adequate Treatment Among Those With Serious Mental Illness (SMI): United States, 1990–1992

	Receiving Any Treatment, Among Those With SMI (n = 376)			Receiving Minimally Adequate Treatment, Among Those Receiving Any Treatment for SMI (n = 147)			Not Receiving Minimally Adequate Treatment, Among Those With SMI (n = 376)		
	%	AOR	(95% CI)	%	AOR	(95% CI)	%	AOR	(95% CI)
Age, y									
15–24	30.6	0.3*	(0.1, 0.7)	36.0	0.5	(0.1, 3.0)	88.4	4.9*	(1.0, 24.3)
25–34	30.9	0.3*	(0.1, 0.7)	43.6	1.0	(0.3, 3.6)	86.6	2.2	(0.9, 5.3)
35–44	49.7	0.6	(0.3, 1.2)	34.4	0.6	(0.2, 1.8)	83.1	1.6	(0.7, 3.4)
45–54	60.0	1.0		37.1	1.0		79.1	1.0	
Sex									
Male	37.5	1.0		35.9	1.0		86.8	1.0	
Female	40.9	1.2	(0.7, 2.1)	38.8	1.0	(0.4, 2.7)	84.3	0.9	(0.4, 1.9)
Race/ethnicity									
Non-Hispanic Black	39.0	0.8	(0.4, 1.6)	19.4	0.2*	(0.1, 0.3)	93.4	3.3*	(1.1, 9.7)
Non-Hispanic White	42.8	1.0		37.6	1.0		84.2	1.0	
Hispanic	25.9	0.5	(0.3, 1.1)	76.8	4.7*	(1.6, 13.4)	80.7	0.8	(0.3, 1.8)
Other	34.6	1.0	(0.3, 3.6)	13.5	0.2	(0.0, 2.3)	95.4	3.6	(0.4, 33.1)
Income level									
Lowest	29.7	0.5	(0.2, 1.2)	42.1	1.8	(0.4, 7.1)	87.7	0.8	(0.3, 2.4)
Low	42.9	0.7	(0.4, 1.4)	27.0	1.0	(0.3, 3.3)	88.5	1.1	(0.4, 3.0)
Medium	34.1	0.6	(0.2, 1.2)	51.9	3.4	(0.6, 17.5)	83.0	0.7	(0.2, 2.1)
High	40.6	0.6	(0.3, 1.5)	44.9	1.3	(0.3, 5.8)	81.8	0.8	(0.2, 2.9)
Highest	48.0	1.0		34.4	1.0		83.6	1.0	
Education, y									
0–11	34.6	0.4	(0.2, 1.1)	39.1	1.0	(0.2, 4.2)	86.8	1.5	(0.7, 3.5)
12	39.2	0.6	(0.2, 1.4)	39.8	1.1	(0.4, 3.1)	84.4	0.9	(0.3, 2.6)
13–15	29.8	0.5	(0.3, 1.1)	34.1	0.9	(0.3, 2.4)	86.8	1.3	(0.6, 3.0)
≥16	57.2	1.0		35.2	1.0		80.0	1.0	
Urbanicity									
Major metropolitan	37.6	1.0		42.2	1.0		84.3	1.0	
Other urbanized	44.0	1.4	(0.8, 2.5)	35.8	0.6	(0.3, 1.3)	84.5	1.2	(0.6, 2.2)
Rural	37.3	1.1	(0.6, 2.2)	29.5	0.6	(0.01, 2.8)	89.3	1.7	(0.7, 4.3)
Region									
Northeast	27.3	0.5*	(0.2, 0.9)	49.5	3.9*	(1.2, 12.5)	86.7	1.0	(0.4, 2.3)
Midwest	40.4	1.0	(0.4, 2.2)	44.8	2.6	(0.9, 7.4)	81.9	0.6	(0.2, 1.6)
South	43.1	1.0		26.3	1.0		88.0	1.0	
West	43.5	1.2	(0.7, 2.2)	42.1	1.5	(0.4, 5.9)	82.3	0.7	(0.3, 1.8)
Employment status									
Employed	39.6	1.0		37.5	1.0		85.5	1.0	
Homemaker	40.1	1.1	(0.4, 2.9)	44.9	1.5	(0.3, 7.4)	82.5	1.0	(0.3, 3.9)
Student	38.6	2.4*	(1.0, 2.9)	29.1	2.4	(0.5, 11.6)	81.1	0.3	(0.1, 1.1)
Unemployed	42.2	1.7*	(1.0, 3.2)	24.0	0.4	(0.1, 1.5)	90.4	1.6	(0.6, 4.4)
Marital status									
Currently married	45.2	1.0		36.2	1.0		83.9	1.0	
Never married	31.9	0.7	(0.3, 1.4)	41.3	1.1	(0.3, 4.5)	87.0	0.8	(0.3, 1.9)
Previously married	40.0	0.7	(0.4, 1.3)	37.0	1.5	(0.5, 4.7)	85.4	0.9	(0.4, 1.9)

Note. See Table 1 for descriptions of treatments. AOR = adjusted odds ratio; CI = confidence interval.

* $P < .05$ (2-sided).

Young adults were less likely to receive any treatment or minimally adequate treatment. In previous studies, this finding has been explained on the basis of a greater dependence of adolescents and young adults on others around them in regard to both initiating and continuing treatment.^{32,47}

Other studies of general medical as well as mental illness have revealed that Blacks have a lower likelihood of receiving quality care.^{48,49} In this study, we disaggregated the process of receiving adequate treatment and found that Black race/ethnicity was not a significant predictor of whether one successfully accessed any care for serious mental illness. However, among those who successfully accessed some mental health care, Blacks with serious mental illness were 5 times less likely to receive minimally adequate treatment. Further research is necessary to determine the degree to which this finding may result from a greater likelihood among African Americans of leaving treatment prematurely, from treatment bias on the part of providers, or from other factors.⁵⁰

On the other hand, Hispanics were nearly 5 times more likely than non-Hispanic Whites to receive adequate care for serious mental illness. Greater intensities of treatment among Hispanic patients have been observed in some^{51–53} but not all previous studies.⁵⁴ Some have suggested that Hispanic patients are more likely to believe that psychiatric symptoms require professional help and that such symptoms are amenable to treatment.^{55,56}

Previous studies have revealed greater use of any type of mental health treatment in the South than in the Northeast, and this finding has been explained on the basis of a higher likelihood among those in the South than those in the Northeast of reporting psychic distress.⁵⁷ On the other hand, use of more intensive treatment regimens (e.g., greater frequency of visits) in the Northeast than in the South has also been observed previously and explained in part by the fact that the South contains more rural areas with fewer mental health specialists.^{58,59}

Further research is needed to clarify the reasons for inadequate treatment of serious mental illness in the general population and the reasons for even lower prevalences of adequate treatment in particular subpopulations.

On the basis of such information, legislation and cost-effective interventions can be designed and targeted to increase patients' acceptance of and adherence to treatments, as well as clinicians' ability to detect, diagnose, and appropriately treat serious mental illness.^{60–64} In addition, it will be necessary to establish and apply performance standards or "report cards" (e.g., the Substance Abuse and Mental Health Services Administration's Consumer-Oriented Mental Health Report Card⁶⁵ or the new National Committee for Quality Assurance standards⁶⁶) to monitor the effects of future interventions and legislation on the quality of treatment and health outcomes of those with serious mental illness. ■

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Contributors

P.S. Wang and R.C. Kessler designed the study, supervised the data analyses, interpreted the results, and wrote the manuscript. O. Demler conducted the data analyses and assisted in the interpretation of results and writing of the manuscript.

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